National Institute of Environmental Health Sciences

Assessing regional impacts and adaptation strategies for climate change: The Washington Climate Change Impacts Assessment

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Abstract:

Climate change in the twenty-first century will strongly affect the processes that define natural and human systems. The Washington Climate Change Impacts Assessment (WACCIA) was intended to identify the nature and effects of climate change on natural and human resources in Washington State over the next century. The assessment focused on eight sectors that were identified as being potentially most climate sensitive: agriculture, energy, salmon, urban stormwater infrastructure, forests, human health, coasts, and water resources. Most of these sectors are sensitive in one way or another to water availability. While water is generally abundant in the state under current climate conditions, its availability is highly variable in space and time, and these variations are expected to change as the climate warms. Here we summarize the results of the WACCIA and identify uncertainties and common mechanisms that relate many of the impacts. We also address cross-sectoral sensitivities, vulnerabilities, and adaptation strategies.

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Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES)

Special Report on Emissions Scenarios (SRES) Scenario: SRES A1, SRES B1

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Ecosystem Changes, Extreme Weather Event, Food/Water Quality, Food/Water Security, Food/Water Security, Precipitation, Sea Level Rise, Temperature

Air Pollution: Ozone

Extreme Weather Event: Flooding, Landslides, Wildfires

Food/Water Quality: Other Water Quality Issue

Water Quality (other): Water temperature; Saltwater intrusion; Ocean acidity

Food/Water Security: Agricultural Productivity, Fisheries

Temperature: Extreme Heat, Fluctuations

Geographic Feature: ☑

resource focuses on specific type of geography

Ocean/Coastal, Urban, Other Geographical Feature

Other Geographical Feature : Forest

Geographic Location: ☑

resource focuses on specific location

United States

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Morbidity/Mortality, Respiratory Effect

Respiratory Effect: Asthma

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Exposure Change Prediction, Methodology

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: ☑

format or standard characteristic of resource

Review

Timescale: ☑

time period studied

Long-Term (>50 years)

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content